

REMARKS

The above amendments and following remarks are responsive to the points raised in the June 13, 2005 non-final Office Action. Upon entry of the above amendments, Claim 1 will have been amended, new Claims 21-23 will have been added, and Claims 1-23 will be pending. No new matter has been introduced. Entry and reconsideration are respectfully requested.

Response to Rejections under 35 U.S.C. § 102

Claims 1-4 have been rejected under 35 U.S.C. § 102(e) as being unpatentable over US Patent Application Publication US 2004/0150893 A1 to Shinohara. Claims 9, 10, 14, and 15 have been rejected under 35 U.S.C. § 102(b) as being unpatentable over US Patent 6,476,982 to Kawakami. Applicant respectfully traverses these rejections.

The refractive index N2 of the second lens element, as recited in amended Claim 1, is greater than 1.65. In contrast, Shinohara, as shown in Tables 1 and 4, discloses a refractive index N2 of the second lens element L2 of 1.5311, which is smaller than that recited in amended Claim 1. As such, the lens system recited in amended Claim 1 is distinguished over the imaging lens disclosed by Shinohara. Claims 2-4, which depend from Claim 1, are likewise distinguished over Shinohara for at least the same reasons as Claim 1.

In regard to Claim 9, Kawakami discloses an air lens between the second lens element L2 and the third lens element L3 having a biconvex shape. With such a shape, the focal length of this Kawakami air lens has a negative value. In other words, this air lens disclosed by Kawakami has a negative optical power. The air lens, as recited in Claim 9, however, between

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the second lens element, and the third lens element has a positive value as can be seen from the recited condition of “ f_a/f ” therein. As such, the lens system of Claim 9 is distinguished over the photographing lens system disclosed by Kawakami. Claims 10, 14, and 15, which depend from Claim 9, are likewise distinguished over Kawakami for at least the same reasons as Claim 9.

In view of the above, the rejections under 35 U.S.C. § 102 should be withdrawn.

Response to Rejections under 35 U.S.C. § 103(a)

Claims 6 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Shinohara in view of US Patent 6,728,047 to Sato et al. (Sato). Claims 7 and 8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Shinohara in view of Kawakami. Claims 16, 19, and 20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent 5,596,455 to Eckhardt in view of Kawakami. Applicant respectfully traverses these rejections.

The Examiner acknowledges that the primary reference of Shinohara does not teach the subject matter introduced in Claims 6-8 and attempts to remedy the deficiencies of Shinohara by relying on the secondary teachings of Sato (Claim 6) and Kawakami (Claims 7 and 8). Applicants respectfully submit that the subject matter encompassed by dependent Claims 6-8 are neither taught, suggested, or otherwise render obvious, by the teachings of Shinohara, Sato, or Kawakami, either alone or in combination.

In addition to the deficiencies of Shinohara acknowledge by the Examiner, Claims 6-7, by virtue of their dependency on independent Claim 1, include all of the limitations of

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independent Claim 1. As discussed above, Claim 1 has been amended to include that the refractive index N_2 of the second lens element is greater than 1.65, which is larger than the refractive index of 1.5311 of the second lens element L2 of Shinohara. No where is it seen within each of the secondary references of Sato and Kawakami, where Sato or Kawakami teach, suggest, or would have otherwise motivated one of ordinary skill in the art, at the time the invention was made, to have modified Shinohara, as suggested by the Examiner, and to have modified the second lens element L2 thereof to have a refractive index greater than 1.65. As such, the subject matter recited in Claims 6-8 is distinguished over the teachings of Shinohara, Sato, and Kawakami, either alone or in combination.

The Examiner acknowledges that Eckhardt does not teach or suggest each feature recited in Claims 16, 19, and 20 and attempts to remedy the deficiencies of Eckhardt by relying on the secondary reference of Kawakami. More specifically, the Examiner urges that Eckhardt

“fails to teach an aperture stop as being the first element of the lens system as claimed in independent claim 1 [sic] and the use of the claimed lens in an image taking device as claimed in dependent claims 19 and 20.”

Applicants urge that Eckhardt is further deficient in that the air lens between the second lens element 28 and the third lens element 30 has a biconvex shape. Such a biconvex shape means that the focal length of this Eckhardt air lens is of a negative value. In other words, this Eckhardt air lens has a negative optical power. In Claim 16, however, the focal length of the air lens between the second lens element and the third lens element has a positive value as can be seen from the Claim 16 recitation of “ f_a/f ”. No where is it seen within each of the secondary references of Kawakami, where Kawakami teaches, suggests, or would have otherwise motivated

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one of ordinary skill in the art, at the time the invention was made, to have modified Eckhardt, as suggested by the Examiner, and to have modified the air lens between the second lens element 28 and the third lens element 30 of Eckhardt to have a positive optical power. As such, the subject matter recited in Claim 16 is distinguished over the teachings of Eckhardt and Kawakami, either alone or in combination. Claims 19 and 20, which depend from independent Claim 16, are likewise distinguished over the teachings of Eckhardt and Kawakami, either alone or in combination, for at least the same reasons as Claim 16. Newly added independent Claim 21, like Claim 16, includes the recitation “ f_a/f ”.

Accordingly, the rejections under 35 U.S.C. § 103(a) should be withdrawn.

Allowable Subject Matter

Claims 5, 11-13, 17, and 18 have been objected to by the Examiner as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant concurs with the Examiner’s finding. Applicants believe that each of the claims are allowable over the prior art.

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CONCLUSION

Applicant respectfully submits that Claims 1-8, 10-15, and 17-20 are in condition for allowance and a notice to that effect is earnestly solicited.

AUTHORIZATION

The Commissioner is hereby authorized to charge any fees which may be required for filing this Amendment and Request for Reconsideration to Deposit Account No. 13-4500, Order No. 1232-5382.

Respectfully submitted,

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Dated: September 12, 2005

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